

Jan. 1882.

Madras Observations etc.

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Observations of Jupiter's Satellites made at the Observatory, Madras.

(Communicated by N. R. Pogson, Esq., Government Astronomer.)

Date.	Madras Mean Time.			Phenomenon		Telescope.		Initials of
1862.	h	m	s	By N. A.	and Phase.	Maker.	Power.	Observer.
Feb. 15	10	56	35.0	56 23	I. Ec. D. <i>e</i>	Tulley	180	N. R. P.
18	12	4	53.3	2 10	III. Ec. D. <i>e</i>	"	134	"
Mar. 3	9	12	7.8	11 44	I. Ec. D. <i>e</i>	"	180	"
	9	25	48.8	26 0	II. Oc. R. <i>b</i>	"	180	"
	11	39	9.8	40 0	I. Oc. R. <i>b</i>	"	180	"
10	11	5	7.9	5 25	I. Ec. D. <i>e</i>	"	134	"
May 4	10	1	44.6	1 48	I. Ec. R. <i>b</i>	Lerebours	66	"
1866.								
Sept. 20	8	11	46.7	12 9	I. Ec. R. <i>b</i>	"	66	"
1868.								
Jan. 8	7	37	30.7	39 21	III. Ec. D. <i>e</i>	"	66	"
Oct. 28	8	17	48.3	17 16	II. Ec. R. <i>b</i>	"	106	"
	8	42	0.3	46 0	I. Sh. E. <i>e</i>	Simms	166	"
1869.								
Jan. 13	8	43	27.5	43 14	I. Ec. R. <i>b</i>	Tulley	100	"
Feb. 21	7	19	13.2	19 6	I. Ec. R. <i>b</i>	Lerebours	106	"
Mar. 5	7	14	21.9	14 20	II. Ec. R. <i>b</i>	Simms	102	E. I. P.
	7	14	21.2	14 20	II. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
Dec. 10	7	57	11.8	57 23	I. Ec. R. <i>b</i>	Simms	165	"
1870.								
Feb. 1	10	26	46.2	26 41	I. Ec. R. <i>b</i>	"	105	E. I. P.
	10	26	32.3	26 41	I. Ec. R. <i>b</i>	Lerebours	106	J. P. B.
2	7	40	12.5	38 36	II. Ec. D. <i>e</i>	Simms	105	E. I. P.
	7	39	27.7	38 36	II. Ec. D. <i>e</i>	Lerebours	106	N. E. P.
	7	39	49.7	38 36	II. Ec. D. <i>e</i>	Tulley	100	N. R. P.
	9	54	25.6	55 55	II. Ec. R. <i>b</i>	Simms	105	E. I. P.
	9	54	29.6	55 55	II. Ec. R. <i>b</i>	Tulley	100	N. R. P.
9	10	15	57.2	14 24	II. Ec. D. <i>e</i>	Simms	105	J. P. B.
	10	14	32.5	14 24	II. Ec. D. <i>e</i>	Lerebours	106	E. I. P.
	10	15	13.0	14 24	II. Ec. D. <i>e</i>	Tulley	100	N. R. P.
10	6	51	16.6	51 38	I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	6	51	22.0	51 38	I. Ec. R. <i>b</i>	Lerebours	106	J. P. B.
	6	51	32.6	51 38	I. Ec. R. <i>b</i>	Tulley	100	N. R. P.
17	8	46	50.0	47 35	I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	8	47	33.7	47 35	I. Ec. R. <i>b</i>	Lerebours	106	N. E. P.
	8	47	38.2	47 35	I. Ec. R. <i>b</i>	Tulley	100	N. R. P.

Date. 1870.	Madras Mean Time. By Obser.			By N. A.		Phenomenon and Phase.	Telescope.		Initials of Observer.
	h	m	s	m	s		Maker.	Power.	
Feb. 20	10	41	38.7	39	26	III. Ec. D. <i>e</i>	Lerebours	63	G.W.B.
	10	41	16.3	39	26	III. Ec. D. <i>e</i>	Tulley	52	E. I. P.
27	7	0	22.6	2	25	II. Ec. R. <i>b</i>	Simms	163	R. F. C.
	7	0	52.7	2	25	II. Ec. R. <i>b</i>	Lerebours	106	N. E. P.
	7	0	55.7	2	25	II. Ec. R. <i>b</i>	Tulley	134	N. R. P.
Mar. 6	9	35	38.1	38	43	II. Ec. R. <i>b</i>	Lerebours	63	E. I. P.
	9	35	40.1	38	43	II. Ec. R. <i>b</i>	Tulley	100	R. F. C.
1871. Jan. 5	11	32	27.4	32	46	I. Ec. R. <i>b</i>	Tulley	100	N. R. P.
21	9	51	53.3	52	18	I. Ec. R. <i>b</i>	Simms	105	N. E. P.
	9	51	53.4	52	18	I. Ec. R. <i>b</i>	Tulley	100	N. R. P.
23	9	8	57.7	10	3	III. Ec. R. <i>b</i>	Simms	105	N. E. P.
	9	7	21.3	10	3	III. Ec. R. <i>b</i>	Tulley	100	N. R. P.
27	9	49	6.6	50	26	II. Ec. R. <i>b</i>	"	100	"
	11	28	56.5	24	0	I. Tr. I. <i>b</i>	Simms	102	N. E. P.
	11	26	9.3	24	0	I. Tr. I. <i>b</i>	Tulley	187	N. R. P.
	12	26	57.0	25	0	I. Sh. I. <i>b e</i>	Simms	102	N. E. P.
	12	25	59.9	25	0	I. Sh. I. <i>b</i>	Tulley	187	N. R. P.
	13	38	38.8	39	0	I. Tr. E. <i>b e</i>	Simms	102	N. E. P.
	13	39	48.0	39	0	I. Tr. E. <i>e</i>	Tulley	187	N. R. P.
28	8	34	5.7	33	0	I. Oc. D. <i>b e</i>	Simms	163	N. E. P.
	8	33	34.2	33	0	I. Oc. D. <i>b e</i>	Tulley	250	N. R. P.
	11	47	29.1	47	51	I. Ec. R. <i>b</i>	Simms	163	N. E. P.
	11	47	34.4	47	51	I. Ec. R. <i>b</i>	Tulley	134	N. R. P.
30	10	42	8.4	39	15	III. Ec. D. <i>e</i>	"	134	"
Feb. 3	7	39	57.4	38	0	II. Oc. D. <i>e</i>	"	134	"
	12	24	58.5	26	11	II. Ec. R. <i>b</i>	"	134	"
4	10	22	53.8	23	0	I. Oc. D. <i>e</i>	"	100	"
	13	43	20.1	43	29	I. Ec. R. <i>b</i>	"	100	"
6	8	12	2.4	12	28	I. Ec. R. <i>b</i>	"	100	"
	10	2	13.0	59	0	III. Oc. D. <i>e</i>	"	100	"
13	10	7	50.3	8	11	I. Ec. R. <i>b</i>	"	100	"
21	6	53	33.7	55	25	II. Ec. R. <i>b</i>	"	138	"
28	9	29	33.9	31	1	II. Ec. R. <i>b</i>	"	100	"
Mar. 7	6	45	44.3	43	2	III. Ec. D. <i>e</i>	Simms	120	"
	6	55	18.7	52	0	II. Oc. D. <i>e</i>	"	120	"
8	10	24	7.0	24	32	I. Ec. R. <i>b</i>	"	120	"
14	10	46	55.8	43	47	III. Ec. D. <i>e</i>	"	120	"
	10	46	37.6	43	47	III. Ec. D. <i>e</i>	Lerebours	165	N. E. P.

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Date. 1871.	Madras Mean Time. By Obser.			Phenomenon and Phase.	Telescope.		Initials of Observer.
	h	m	s		Maker.	Power.	
Apr. 1	9	9	20.8	II. Ec. R. <i>b</i>	Simms	105	N. R. P.
19	6	49	49.5	III. Ec. D. <i>e</i>	"	105	"
	6	49	34.5	III. Ec. D. <i>e</i>	Lerebours	164	N. E. P.
	9	31	2.0	III. Ec. R. <i>b</i>	"	164	"
1874. Jan. 29	11	18	31.9	II. Ec. D. <i>e</i>	Simms	195	N. R. P.
	11	19	19.0	II. Ec. D. <i>e</i>	Lerebours	160	E. I. P.
1875. Apr. 7	12	4	22.4	I. Sh. E. <i>b m e</i>	Lerebours	160	N. R. P.
	12	14	53.5	I. Tr. E. <i>b m e</i>	Simms	163	E. I. P.
	12	15	9.6	I. Tr. E. <i>b m e</i>	Lerebours	160	N. R. P.
8	9	34	27.2	I. Oc. R. <i>b</i>	Simms	163	E. I. P.
	9	35	15.7	I. Oc. R. <i>b m e</i>	Lerebours	160	N. R. P.
13	9	18	20.6	II. Sh. I. <i>b e</i>	"	160	"
	9	36	25.4	II. Tr. I. <i>b</i>	Simms	163	E. I. P.
	9	25	55.6	II. Tr. I. <i>b m e</i>	Lerebours	160	N. R. P.
	11	39	57.2	II. Sh. E. <i>b</i>	Simms	163	E. I. P.
	11	38	52.2	II. Sh. E. <i>b m e</i>	Lerebours	160	N. R. P.
	11	46	45.6	II. Tr. E. <i>b e</i>	Simms	163	E. I. P.
	11	44	14.6	II. Tr. E. <i>b m e</i>	Lerebours	160	N. R. P.
15	9	8	57.6	I. Ec. D. <i>e</i>	Simms	163	E. I. P.
	9	8	47.0	I. Ec. D. <i>e</i>	Lerebours	106	N. R. P.
	11	18	27.9	I. Oc. R. <i>b</i>	"	106	"
27	8	23	41.0	III. Ec. R. <i>b</i>	Simms	163	E. I. P.
	8	23	58.5	III. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
29	11	10	1.0	II. Ec. R. <i>b</i>	Simms	163	E. I. P.
	11	9	25.4	II. Ec. R. <i>b</i>	Lerebours	108	N. R. P.
May 1	9	32	25.0	I. Ec. R. <i>b</i>	Simms	163	E. I. P.
	9	32	35.7	I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
4	8	51	31.0	III. Oc. D. <i>e</i>	Simms	163	E. I. P.
	8	48	38.2	III. Oc. D. <i>e</i>	Lerebours	160	N. R. P.
	12	20	24.8	III. Ec. R. <i>b</i>	Simms	163	E. I. P.
	12	20	33.8	III. Ec. R. <i>b</i>	Lerebours	160	N. R. P.
6	10	23	30.7	II. Oc. D. <i>b m e</i>	Simms	163	E. I. P.
	10	25	46.6	II. Oc. D. <i>b m e</i>	Lerebours	160	N. R. P.
	13	45	49.0	II. Ec. R. <i>b</i>	Simms	163	E. I. P.
	13	45	48.8	II. Ec. R. <i>b</i>	Lerebours	160	N. R. P.
8	11	26	29.8	I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	11	26	26.9	I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.

Date. 1875.	Madras Mean Time. By Obser.			By N. A.		Phenomenon and Phase.	Telescope.		Initials of Observer.
	h	m	s	m	s		Maker.	Power.	
May 11	12	3	24.3	0	0	III. Oc. D. <i>bme</i>	Simms	163	E. I. P.
	12	3	57.2	0	0	III. Oc. D. <i>bme</i>	Lerebours	160	N. R. P.
	14	3	26.0	4	0	III. Oc. R. <i>b</i>	Simms	163	E. I. P.
	14	3	24.7	4	0	III. Oc. R. <i>b</i>	Lerebours	160	N. R. P.
	14	21	38.0	19	25	III. Ec. D. <i>e</i>	Simms	105	E. I. P.
	14	22	53.5	19	25	III. Ec. D. <i>e</i>	Lerebours	106	N. R. P.
15	9	54	4.0	55	0	II. Tr. E. <i>e</i>	Simms	163	E. I. P.
	9	54	39.8	55	0	II. Tr. E. <i>bme</i>	Lerebours	160	N. R. P.
	10	32	22.0	32	0	I. Oc. D. <i>bme</i>	Simms	163	E. I. P.
	10	32	41.1	32	0	I. Oc. D. <i>bme</i>	Lerebours	160	N. R. P.
	11	8	44.3	16	0	II. Sh. E. <i>be</i>	Simms	163	E. I. P.
	11	9	17.4	16	0	II. Sh. E. <i>bme</i>	Lerebours	160	N. R. P.
	13	20	33.2	20	49	I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	13	20	26.5	20	49	I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
17	7	49	10.7	49	21	I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	7	50	5.7	49	21	I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
22	9	49	26.2	44	0	II. Tr. I. <i>bme</i>	Simms	163	E. I. P.
	9	51	1.4	44	0	II. Tr. I. <i>bme</i>	Tulley	262	N. R. P.
	10	0	4.7	14	0	III. Sh. E. <i>bme</i>	„	262	„
	11	23	8.9	19	0	II. Sh. I. <i>b</i>	Simms	163	E. I. P.
	11	23	5.0	19	0	II. Sh. I. <i>b</i>	Lerebours	160	N. R. P.
	12	11	52.9	13	0	II. Tr. E. <i>bme</i>	Simms	163	E. I. P.
	12	11	28.2	13	0	II. Tr. E. <i>bme</i>	Lerebours	160	N. R. P.
	12	18	55.0	18	0	I. Oc. D. <i>bme</i>	Simms	163	E. I. P.
	12	19	46.2	18	0	I. Oc. D. <i>bme</i>	Lerebours	160	N. R. P.
23	10	18	53.6	18	0	I. Sh. I. <i>bme</i>	Simms	163	E. I. P.
	10	18	39.4	18	0	I. Sh. I. <i>be</i>	Lerebours	160	N. R. P.
	11	40	11.9	42	0	I. Tr. E. <i>bme</i>	Simms	163	E. I. P.
	11	39	24.8	42	0	I. Tr. E. <i>bme</i>	Lerebours	160	N. R. P.
	12	27	56.4	31	0	I. Sh. E. <i>bme</i>	Simms	163	E. I. P.
	12	27	51.8	31	0	I. Sh. E. <i>b</i>	Lerebours	160	N. R. P.
24	6	44	56.0	45	0	I. Oc. D. <i>bme</i>	„	160	„
	9	43	8.6	43	35	I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	9	43	13.1	43	35	I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
June 9	8	10	17.2	43	0	III. Ec. R. <i>b</i>	„	106	„
	8	10	18.2	43	0	III. Ec. R. <i>b</i>	Simms	106	E. I. P.
1876. May 19	10	41	58.2	41	36	I. Ec. R. <i>b</i>	„	143	E. I. P.
	10	42	8.1	41	36	I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.

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Date. 1876.	Madras Mean Time. By Obser.			Phenomenon and Phase.	Telescope.		Initials of Observer.
	h	m	s		Maker.	Power.	
May 24	9	18	36.6	20 44 II. Ec. R. <i>b</i>	Simms	145	E. I. P.
	9	18	49.1	20 44 II. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
25	8	13	29.8	12 0 III. Oc. D. <i>b e</i>	Simms	105	E. I. P.
	8	13	16.4	12 0 III. Oc. D. <i>b m e</i>	Lerebours	165	N. R. P.
	10	34	7.4	38 47 III. Ec. R. <i>b</i>	Simms	145	E. I. P.
	10	35	36.9	38 47 III. Ec. R. <i>b</i>	Lerebours	105	N. R. P.
26	10	15	0.6	13 0 I. Oc. D. <i>b m e</i>	Simms	145	E. I. P.
	10	13	31.7	13 0 I. Oc. D. <i>b m e</i>	Lerebours	160	N. R. P.
	12	36	18.7	35 43 I. Ec. R. <i>b</i>	Simms	145	E. I. P.
	12	35	46.5	35 43 I. Ec. R. <i>b</i>	Lerebours	160	N. R. P.
27	7	17	58.4	20 0 I. Tr. I. <i>b m e</i>	Simms	145	E. I. P.
	7	36	32.8	20 0 I. Sh. I. <i>b e</i>	„	163	E. I. P.
May 27	9	30	29.6	32 0 I. Tr. E. <i>b m e</i>	Simms	225	E. I. P.
	9	30	39.8	32 0 I. Tr. E. <i>b m e</i>	Lerebours	160	N. R. P.
	9	42	43.3	46 0 I. Sh. E. <i>b m e</i>	Simms	163	E. I. P.
	9	42	40.8	46 0 I. Sh. E. <i>b e</i>	Lerebours	160	N. R. P.
June 11	10	52	39.4	52 48 I. Ec. R. <i>b</i>	Simms	145	E. I. P.
	10	52	39.3	52 48 I. Ec. R. <i>b</i>	Lerebours	105	N. R. P.
Aug. 3	8	55	51.7	56 36 II. Ec. D. <i>e</i>	Simms	163	E. I. P.
	8	57	20.2	56 36 II. Ec. D. <i>e</i>	Lerebours	106	N. R. P.
	9	46	28.2	46 0 I. Oc. D. <i>b m e</i>	Simms	163	E. I. P.
	9	46	53.0	46 0 I. Oc. D. <i>b</i>	Lerebours	106	N. R. P.
1878. Aug. 20	10	15	9.9	13 50 I. Ec. R. <i>b</i>	Simms	105	B. B. H.
Sep. 19	8	55	13.3	57 0 I. Oc. D. <i>b e</i>	„	163	E. I. P.
	8	55	36.1	57 0 I. Oc. D. <i>b e</i>	Lerebours	160	N. R. P.
	12	23	50.2	23 42 I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	12	23	17.9	23 42 I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
21	6	52	36.8	52 31 I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	6	52	4.3	52 31 I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
28	8	47	47.7	47 53 I. Ec. R. <i>b</i>	Simms	105	E. I. P.
	8	47	59.3	47 53 I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
Oct. 1	11	27	56.9	28 38 II. Ec. R. <i>b</i>	Simms	102	E. I. P.
	11	28	3.6	28 38 II. Ec. R. <i>b</i>	Lerebours	106	N. R. P.
2	6	41	40.4	41 49 III. Ec. D. <i>e</i>	Simms	73	„
5	7	7	50.2	8 0 I. Oc. D. <i>b m e</i>	„	160	E. I. P.
	7	7	34.9	8 0 I. Oc. D. <i>b m e</i>	Tulley	100	N. R. P.
14	7	7	38.8	7 33 I. Ec. R. <i>b</i>	Simms	102	C. A. P.
	7	7	47.8	7 33 I. Ec. R. <i>b</i>	Lerebours	106	N. R. P.

1882 ANIRAS.

Date.	Madras Mean Time.					Phenomenon and Phase.	Telescope.		Initials of Observer.
	By Obser.	By N. A.			Maker.		Power.		
1870.	h	m	s	m	s				
Oct. 19	10	55	2.7	10	56	I. Oc. D. <i>b e</i>	Lerebours	160	E. I. P.
21	9	2	50.8	2	55	I. Ec. R. <i>b</i>	„	106	C. A. P.
	9	2	54.3	2	55	I. Ec. R. <i>b</i>	Tulley	100	N. R. P.
	10	8	1.2	13	0	IV. Oc. D. <i>b e</i>	Simms	163	E. I. P.
	10	8	8.0	13	0	IV. Oc. D. <i>b e</i>	Lerebours	160	N. R. P.
1880.									
Dec. 13	7	16	32.3	15	0	I. Oc. D. <i>e</i>	Simms	165	S. B. H.
	10	44	8.9	44	34	I. Ec. R. <i>b</i>	„	102	„
	10	44	13.1	44	34	I. Ec. R. <i>b</i>	Lerebours	105	E. I. P.
1881.									
Feb. 5	7	0	46.0	0	0	I. Tr. I. <i>b m e</i>	„	160	E. I. P.
	8	14	24.9	10	0	I. Sh. I. <i>b e</i>	„	160	„

Date.	Observer.	Notes.
1862.		
Feb. 15	N. R. P.	Faded away gradually for about 10 ^s .
18	„	Fading for about 4 ^m , and uncertain for about 4 ^s .
March 3	„	First satellite fading for 9 ^s at eclipse.
	„	Second satellite about 1 ^m in getting clear of the disk.
	„	The night windy and cloudy during the third observation.
10	„	Fading for about 23 ^s .
May 4	„	Increasing about 1 ^m 15 ^s .
1866.		
Sept. 20	N. R. P.	Increasing for about 15 ^s .
1868.		
Oct. 28	N. R. P.	Second satellite increasing for about 1 ^m 15 ^s .
	„	Last trace of shadow emersion of first satellite.
1869.		
Feb. 21	N. R. P.	Pretty sudden, but nearly 2 ^m regaining ordinary brilliancy.
March 5	„	About 1 ^m increasing to full brightness.
1870.		
Feb. 1	—	Neither observer satisfied.
9	N. R. P.	Faded away slowly for nearly 2 ^m , and uncertain to about 10 ^s .
	J. P. B.	Uncertain to 5 ^s .
20	G. W. B.	Uncertain to about 17 ^s .
1871.		
Jan. 5	N. R. P.	Faint and slowly increasing for a minute or more.
21	„	Increasing through full 6 ^m ; uncertain to 10 ^s .
27	„	Full brilliancy of second satellite acquired in less than 3 ^m after reappearance.
	N. E. P.	First satellite about 3 ^m entering on disk.
	N. R. P.	Uncertain to about 30 ^s .

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Date. 1871.	Observer.	Notes.
Jan. 27	N. E. P.	Shadow immersion of first satellite: first and last contacts differed by $2^m 38^s$.
	N. R. P.	Uncertain to about 30^s .
	N. E. P.	Transit emersion of first satellite: first and last contacts differed by $2^m 45^s$.
28	N. R. P.	First contact and last disappearance differed by 52^s .
30	„	Fading away for full 6^m before.
Feb. 6	„	Uncertain to about 30^s .
¹⁸⁷⁴ Jan. 29	N. R. P.	Fading visibly for about $2^m 30^s$, and uncertain to about 3^s .
	E. I. P.	Uncertain to 2 or 3 seconds.
¹⁸⁷⁵ April 7	N. R. P.	Transit emersion of first satellite: satellite sharp and white on large north belt.
13	E. I. P.	Transit immersion of second satellite: completely on disk $1^m 57^s$ after.
	„	Shadow emersion of second satellite: completely gone $1^m 35^s$ later.
15	N. R. P.	First satellite fading away for about $1^m 30^s$ before disappearance.
	„	First satellite clear of the disk 58^s after first reappearance.
27	„	At least 6^m in acquiring its full light.
29	„	About 3^m increasing to full brightness.
May 4	„	Third satellite increasing for 9^m after reappearance.
6	„	About 4^m increasing to full brightness.
8	E. I. P.	About 3^m „ „
11	„	Third satellite quite out a little over 4^m later.
	N. R. P.	„ „ „
15	E. I. P.	Transit egress of second satellite: first seen $3^m 31^s$ before.
	N. R. P.	Increasing for 3^m or 4^m .
22	E. I. P.	Completely on disk $1^m 45^s$ later.
23	N. R. P.	Completely gone $1^m 30^s$ later.
¹⁸⁷⁶ May 24	„	Well out when first seen: 1^m increasing.
25	E. I. P.	First contact and complete disappearance of third satellite differed by $14^m 5^s$.
	N. R. P.	The interval between the first contact and the complete disappearance of the third satellite was $16^m 19^s$.
	„	Reappearance of third satellite: equal to fourth at $10^h 42^m 14^s$, and of full brightness at $10^h 46^m 43^s$.
26	E. I. P.	Increasing for about 4^m .
27	„	First and last contacts differed by $2^m 12^s$.

Date.	Observer.	Notes.
1876.		
June 11	N. R. P.	Increasing for about 3 ^m .
Aug. 3	E. I. P.	Second satellite fading for about 5 ^m .
	N. R. P.	Second satellite reappeared from occultation 2 ^m or 3 ^m earlier.
1878.		
Sept. 19	E. I. P.	First and last contacts at disappearance of first satellite differed by 2 ^m 40 ^s .
	N. R. P.	First and last contacts at disappearance of first satellite differed by 6 ^m 58 ^s , Sky hazy and definition bad.
	"	First satellite increasing for about 2 ^m 30 ^s after reappearance.
	21	E. I. P. Increasing for about 3 ^m .
	28	" Increasing for about 2 ^m 30 ^s .
Oct. 1	"	" 1 ^m 30 ^s .
	14	" Sky very hazy.
	21	E. I. P. First and last contacts differed by 7 ^m 55 ^s .
	N. R. P.	" " 6 ^m .
1880.		
Dec. 13	S. B. H.	First satellite last seen. Passing clouds about.
	"	Increasing for about 2 ^m 30 ^s .
	E. I. P.	" "
1881.		
Feb. 5	E. I. P.	<i>Jupiter</i> too low for further observation.

Most of the observations were made by the Astronomer and various members of his family, and a few by friendly amateurs, who, being present at the time, kindly lent their assistance.

The observations, mostly recorded with sidereal clocks, have been reduced to Madras mean time, and the *Nautical Almanac* times of the various phenomena added in a separate column to show the difference between observation and theory. The small letters, *b* for beginning or first contact, *m* for middle or bisection, and *e* for end or last contact, have been used to signify the phase noted.

The instruments used were the eight-and-a-half inch Equatoreal by Messrs. Troughton & Simms; the six-and-a-quarter inch Equatoreal by Messrs. Lerebours & Secretan; and the excellent five-foot telescope by Tulley, originally constructed for Captain W. H. Smyth, R.N., in 1829, afterwards the property of J. Lee, Esq., LL.D. of Hartwell, and known as the Smythian Telescope. The magnifying powers employed are also given.

The names of the observers, indicated by their initials, were:—

Norman Robert Pogson, Esq., C.I.E., Government Astronomer.

Norman Everard Pogson, late Assistant Government Astronomer.

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Elizabeth Isis Pogson, present Assistant Government Astronomer.

Charles Albion Pogson, an intelligent little boy of ten, who could record the clock very correctly.

Captain James Palladio Basevi, R.E., of the Great Trigonometrical Survey of India.

George W. Barclay, Esq., Assistant-Superintendent, Government Telegraph Department, in charge of Madras Office.

Robert Fellowes Chisholm, Esq., F.R.I.B.A., Consulting Architect to Government, Madras.

Major Bertie B. Hobart, R.A., Military Secretary to the Governor of Madras.

Surgeon-Major Samuel Bradshaw Hunt, Indian Medical Department.

The reductions of occultations of planets and stars, and of other casual phenomena observed at Madras since 1861, are in hand, and will follow shortly.

Madras Observatory:

1881, June 9.